

ABSTRACT OF THE DISCLOSURE

Method of fabricating a semiconductor die with a microlens associated therewith. More particularly, a method for fabricating a vertical channel guide optical via through a silicon substrate wherein the optical via can contain lens elements, a discrete index gradient guiding pillar and other embodiments. Also disclosed are means for transferring, coupling and or focusing light from an electronic-optical device on the top of a semiconductor substrate through the substrate to a waveguiding medium below the substrate. The high alignment accuracies afforded by standard semiconductor fabrication processes are exploited so as to obviate the need for active alignment of the optical coupling or light guiding elements.